

Application No.: 10/575,173

Docket No.: 06005/41124

LISTING OF CLAIMS

1. (Currently amended) An integrated graphical user interface for a process control environment, the integrated graphical user interface comprising:
 - a configuration environment; including
 - a plurality of graphical element objects included in the configuration environment, each graphical element object corresponding to a data source in the process control environment and including:
 - a visualization defining a visual property of a graphical element corresponding to the each graphical element object when the each graphical element object is implemented in a run-time environment, and
 - at least one element binding defining an element interface between the each graphical element object and the data source in the run-time environment;
 - a plurality of graphical display objects included in the configuration environment, each graphical display object corresponding to a display view presented in the run-time environment and including:
 - an indication of one or more connecting graphical element objects, and
 - one or more display bindings defining a display interface between the each graphical display object and the display view in the run-time environment;
 - a resolution table including:
 - an indication of connections between element bindings and data sources in the process control environment, and
 - an indication of connections between display bindings and display views in the process control environment; [[and]]
 - [[a]] the runtime environment including a real-time interface to two or more functional areas of a process plant, the functional areas including operations, maintenance, configuration, and simulation[[,]];
 - the real-time interface providing two or more real-time displays provided by the real-time interface,
 - each of the two or more real-time displays corresponding to a different functional area of the process plant,
 - each of the two or more real-time displays being bound, using the resolution table and a respective display binding, to a respective graphical display object, and

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each respective graphical display object corresponding to the each of the two or more real-time displays including an indication of a same graphical element object from the plurality of graphical element objects from a set of real-time displays, the set of real-time displays including an operator display, a maintenance display, a configuration display, and a simulation display; and
a same graphical element corresponding to the same graphical element object, the same graphical element presented on each of the two or more real-time displays and bound, using the resolution table and a respective element binding, includes a same graphic element corresponding to a same data source in the run-time environment same graphical element object of the plurality of graphical element objects.

2. (Canceled)

3. (Canceled)

4. (Currently amended) The integrated graphical user interface of claim 1, wherein the two or more real-time displays include a display of at least one of: a panel motor start/stop button, a status indication, a chart recorder, an annunciator panel, a subsystem interface, a maintenance request, a maintenance report, or a supervisory report.

5. (Currently amended) The integrated graphical user interface of claim 1, wherein the integrated graphical user interface supports an operator interface for performing one or more of: alarm management, process parameter adjustment by entry of process parameters, zoom in viewing of portions of the process for enhanced detail viewing, or utilization of specialized applications related to the process.

6. (Currently amended) The integrated graphical user interface of claim 1, wherein the integrated graphical user interface can run in a dedicated mode and a non-dedicated mode, the dedicated mode comprising at least one of: a mode including a fixed display arrangement or a mode corresponding to controlled access, and the non-dedicated mode for use by configuration personnel.

7. (Canceled)

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8. (Currently amended) The integrated graphical user interface of claim 1, wherein the [[the]] same graphical element object is executable on one or more of a workstation, a laptop, a PDA (Personal Data Assistant), a display on multiple monitors, or a smart phone.

9. (Canceled)

10. (Canceled)

11. (Currently amended) The integrated graphical user interface of claim 1, wherein the integrated graphical user interface supports multiple user interface devices including at least one of a rich client, a web browser, a handheld, or a smart phone.

12. (Currently amended) The integrated graphical user interface of claim 1, wherein the integrated graphical user interface supports one or more of: integrated voice and video; real-time data services; external data services; XML files; access to other service interfaces; composite structure process graphics; class-based control hierarchies; integration of control, alarming, and abnormal situation management and prevention; integrated batch operator interfaces; integrated advanced control operator interfaces; route management; efficiency calculations; optimizations; mass and energy balances; integration of third party applications; multiple data collection systems (DCS), or combinations thereof.

13. (Currently amended) The integrated graphical user interface of claim 1, wherein the runtime environment further includes an instantiation process that binds, during runtime, the same graphical element object to [[a]] the same data source in the process control environment.

14. (Currently amended) An integrated graphical interface providing integrated graphical displays for operation, maintenance, configuration, and simulation of a control system, the interface comprising:

a real-time user interface providing two or more real-time displays, each of the two or more real-time displays corresponding to a different functional level of a set of real-time displays-functional levels of the control system, the set of real-time displays-functional levels

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including an operations functional level display, a maintenance functional level display, a configuration functional level display, and a simulation functional level display;

two or more graphic display objects:

each corresponding to a respective one of the two or more real-time displays,

each bound, via a respective display binding and a resolution table, to the
respective one of the two of more real-time displays, and

each including an indication of a same graphic element object and including
the respective display binding defining a display interface between the each of the
two or more graphic display objects and the respective one of the two or more real-
time displays in a run-time environment;

a graphic element corresponding to the same graphic element object and included on
each of the two or more real-time displays, the graphic element bound, via a respective
element binding and the resolution table, and corresponding to a same graphical element
object bound to each of the two or more real-time displays and to a data source in the
process plant,;

the same graphical graphic element object including:

[[an]] the respective element binding defining an element interface between
the same graphic element object and the data source in the run-time environment;

a visualization defining a visual property of the graphic element when the
same graphic element object is implemented in the run-time environment; and

at least one of a visualization, an element parameter, an element property, an
element action, or [[and]] an element animation; and

the resolution table including indications of a plurality of connections between
element bindings and data sources, and indications of a plurality of connections between
display bindings and real-time displays.

15. (Canceled)

16. (Canceled)

17. (Canceled)

18. (Canceled)

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19. (Currently amended) A method, comprising:

providing an integrated graphical user interface for two or more functional areas of a process plant, the functional areas including operations, maintenance, configuration, and simulation;

providing two or more real-time displays in the integrated graphical user interface, each of the two or more real-time displays corresponding to a different functional area;

providing a set of graphical display objects including respective graphical display objects corresponding to the two or more real-time displays, each graphical display object of the set of graphical display objects corresponding to a respective real-time display and including:

an indication of one or more connecting graphical element objects, and
one or more display bindings defining a display interface between the each
graphical display object and the respective real-time display in a run-time
environment;

~~from a set of real-time displays, the set of real-time displays including an operation display, a maintenance display, a configuration display, and a simulation display;~~

providing a set of graphical element objects including the one or more connecting graphical element objects, each graphical element object of the set of graphical element objects corresponding to a different respective data source in the process plant and
including:

a visualization defining a visual property of a graphical element corresponding
to the each graphical element object when the each graphical element object is
implemented in the run-time environment, and

at least one element binding defining an element interface between the each
graphical element object and the respective data source in the run-time environment;
providing a resolution table including:

indications of connections between element bindings and data sources in the
process plant, and

indications of connections between display bindings and real-time displays in
the process plant;

binding, using respective display bindings and the resolution table, the two or more
real-time displays to respective graphical display objects;

binding, using a respective element binding and the resolution table, a particular
graphical element object to a particular data source; and

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including, on each of the two or more real-time displays, a particular graphic graphical element corresponding to the particular data source a same graphical element object of the set of graphical element objects.

20. (Canceled)

21. (Currently amended) The integrated graphical user interface of claim 1, wherein the same graphical element object includes at least one of a visualization, a parameter, a [[or]] property, an action, or an animation, or a binding.

22. (Canceled)

23. (Currently amended) The integrated graphical user interface of claim [[22]]1, wherein the each graphical display object further includes at least one of: a connector, an animation, an [[or]] action, or a property, or a binding.

24. (Canceled)

25. (Currently amended) The integrated graphical user interface of claim 1, wherein the configuration environment further includes a graphical display editor for creating the plurality of graphical element objects and a graphic object database for storing the plurality of graphical element objects.

26. (Currently amended) The integrated graphical user interface of claim 1, wherein the same graphical element object is included in at least one of: predictive control, predictive maintenance, or system level error detection in the process plant. [100]

27. (Currently amended) The integrated graphical interface of claim 14, further comprising a graphic display included on each of the two or more real-time displays, the graphic display corresponding to a graphical display object bound to each of the two or more real-time displays, wherein at least one of the two or more graphic graphical display object including objects further includes indications of at least two graphic graphical element objects, a display binding, a connector, and at least one of a display property, a display action, or a display animation.

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28. (Currently amended) The integrated graphical interface of claim 14, further comprising a graphic graphical display editor for creating a new graphic graphical element object, a graphic graphical database for storing a set of graphic graphical element objects that includes the new graphic graphical element object and the same graphic graphical element object, and an instantiation process that binds the same graphic graphical element object to the data source via the element binding.

29. (Previously Presented) The integrated graphical interface of claim 14, wherein the real-time user interface is provided on at least one of: a workstation, a laptop, a PDA (Personal Data Assistant), a display across multiple monitors, a multi-screen workstation, a rich client, a web browser, a handheld, or a smart phone.